NEW YORK STATE Integrated Pest Management PROGRAM

Cornell University Cooperative Extension

Elements of IPM for Fresh Market Tomatoes in New York State

Major Insect Pests	Diseases	Rotation (yrs)	Weeds
Colorado potato beetle	early blight	2	annual broadleaves
flea beetle	late blight	NA	annual grasses
tomato hornworm	Anthracnose	3+	perennial weeds
Minor Insect Pests	Septoria	2	
stink bug	Verticillium	3+	
tarnished plant bug	bacterial spot	2	
aphids	bacterial speck	2	
cabbage looper	bacterial canker	3	
	white mold	3+	
	nematodes	2	
	powdery mildew	NA	
	viruses	NA	

A. SITE PREPARATION AND SELECTION	Acreage Goal	Points
1) Review previous season's weed map/list* of fields to choose appropriate weed control strategies. *esp. for last solanaceous crop. See the Weed Assessment List available for use in satisfying this element.	50%	5
2) Crop rotation: for management of bacterial and fungal diseases. 2-3 year rotation away from solanaceous crops, longer if needed, depending on diseases present.	75% 100%	5 10
3) Nutrient management: soil test at least every third year. Fertilize according to test recommendations.	100%	10
4) If manure is applied to field, apply only before planting and incorporate.	100%	10
5) Do not apply all nitrogen at planting: sidedress or topdress part of the total N application.	75%	10
6) Bonus: use trickle irrigation and fertigation.	10% 25% 50%	3 5 10

B. Transplants		
I. For growers producing their own transplants: Greenhouse practices		
1) Disinfect greenhouse structure, benches, and flats	100%	10
2) Obtain disease-free seed (hot water and/or surface disinfected if needed) from a reputable seed source.	50%	10
3) Produce tomato transplants in a separate greenhouse from bedding plants.	100%	10
4) If history of bacterial diseases indicates, treat transplants with bactericide in greenhouse.	100%	10
5) Use yellow sticky traps in greenhouse to monitor for insect pests.	100%	5
II. For growers buying transplants:		
1) Request that transplant grower(s) follow practices 1-4 described above.	100%	10
2) Inspect transplants for insects and diseases upon arrival.	100%	10
C. Planting		
1) If manure is applied to field, apply only before planting and incorporate.	100%	10
2) Use disease-resistant varieties as available and feasible.	100%	10
3) Bonus: Stake, prune, and tie, or cage plants.	10%	10
4) If staking, disinfect stakes re-used from previous seasons.	100%	10
5) Mulch (organic or plastic) for weed and disease management.	10%	5
6) Bonus: Transplant into a killed cover crop. (If using leguminous cover add 5 points)	10%	5 (10)
D. Pest management		
1) Calibrate sprayer at least once per season or every time nozzles are changed.	100%	10
2) Bonus: check spray coverage with water sensitive paper.	100%	5
3) Use one of the following management practices for Colorado potato beetle: a. Long distance rotation b. Edge treatments (border sprays) c. Trench trapping d. Eggplant as a trap crop	25%	5
4) Update weed map/list to determine need for postemergent herbicide. See the Weed Assessment List available for use in satisfying this element.	50%	5
5) Cultivate at least once for weed control if not mulching.	10%	5
6) Scout crop weekly from transplanting to harvest; twice weekly until transplants are established or if late blight is in the area .	25% 50% 100%	3 5 10

7) Use disease forecasts (Tomcast and Blitecast) for timing fungicide applications if weather data is available.	100%	10
8) Use copper applications only if the farm has a history of bacterial diseases or at first detection of bacterial disease symptoms.	50%	5
9) Use thresholds for insect pests.	25% 50% 100%	3 5 10
10) Choose labeled pesticides with the lowest environmental impact.	10%	3
11) Treat only hot spots of insect pests if population is localized.	50%	5
12) Keep records of pest populations, pesticide applications, and cultural practices.	100%	10
13) If field is abandoned because of late blight epidemic, destroy plants within 5 days to prevent sporulation and spread.	100%	10
E. Post harvest		
1) If washing crop, chlorinate wash water and monitor chlorine levels.	100%	10
2) Update weed map/list for use the following season. See the Weed Assessment List available for use in satisfying this element.	50%	5
3) Disk down fields and/or remove plants after harvest.	50%	5
4) Establish a cover crop to scavenge nutrients and control weeds.	50%	5

Growers producing their own transplants:

Total points available (without bonus points): 213

Points needed to qualify (80%): 170

Growers buying transplants:

Total points available (without bonus points): 188

Points needed to qualify (80%): 150

Bonus points available for both categories of growers: 35

TO LEARN MORE...

Specific information on how to apply and use these IPM elements can be found in the following publications:

Integrated Crop and Pest Management Guidelines for Commercial Vegetable Production.

A Method to Measure the Environmental Impact of Pesticides. 1992. New York Food and Life Sciences Bulletin Number 139.

The above reference material can be obtained from county Cornell Cooperative Extension offices

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